

# **MicroPulser 1000 & 1000M**

## **Installation and Operation Manual**



**Dual Output  
Precision Bidirectional  
1,000 Pulses per Revolution  
Volume Pulser for Gas Meters**

### **MicroPulser Operation Overview**

MicroPulser translates the index drive rotation of gas meters into a pulse stream that is proportional to the measured flow rate. MicroPulser is a bidirectional pulser providing an output for clockwise and counter-clockwise index rotation for the model 1000 and matched outputs for the 1000M. Index shaft rotation is monitored by a high resolution optical disk and a dual emitter detector module. A microprocessor monitors two pulse streams from the dual detector module to determine shaft speed and direction. Using a True Absolute Rate™ error correction algorithm a micro controller removes false pulses due to shaft vibration and provides only true rate pulses to the appropriate output.

- *Provides 1000 pulses per revolution for Precision Flow Measurement*
- *Clockwise & counter-clockwise outputs, automatically detects reverse flow*
- *Designed for hazardous locations, Class I, Division 1 Groups C and D*
- *Designed to fit most industrial and commercial gas meters*
- *True Absolute Rate algorithm removes error pulses caused by vibration*
- *Open collector outputs simplify interfacing*
- *Standard 1/2" NPT electrical connection*
- *Environmentally sealed electronics*
- *Hard Anodized aluminum housing for maximum protection*
- *Lubrication free bearings reduce friction to a minimum*

## ***Installation***

MicroPulser is installed between the meter and optionally a vertical index. You may need additional hardware such as longer bolts or screws to mount the MicroPulser to the meter and index.

- Notice that the spinner shaft is not located in the center of the MicroPulser housing. Check the MicroPulser shaft alignment with the meter drive shaft carefully before installing.
- Rotate the MicroPulser drive shaft so that the bottom drive pin will not hit the meter drive when the MicroPulser is set on the meter.
- With the MicroPulser positioned on the meter - the top spinner should move freely without any binding or rubbing.
- Remember that the shaft may need to rotate as far as 1/10th of a rotation (36 degrees) before pulses are produced on a new installation or rotation direction is reversed due to the True Absolute Rate error correction.
- The gasket provided with the MicroPulser may not be required in all applications.
- MicroPulser requires a dual channel isolation barrier installed per the barrier manufacturer's specifications to maintain intrinsic safety. One channel is used to limit power to the MicroPulser supply and the other is used for one of the outputs. Each output requires a barrier channel. **Refer to the MicroPulser I.S. installation drawing MCD001 for hazardous location installation details.**
- Outputs share the same ground and are not isolated from each other. Use caution when connecting to separate pieces of equipment.

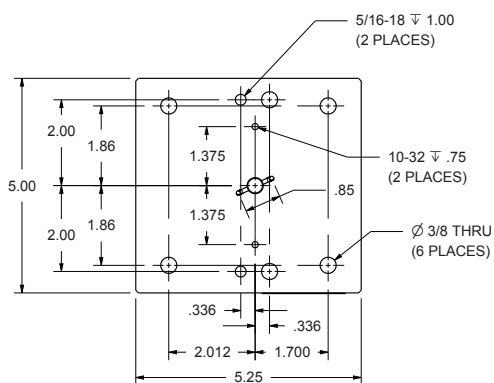
## ***MicroPulser Open-Collector Outputs***

MicroPulser outputs are open collector and require power from the device they are connected to. A pull-up resistor, connected to the computer or RTU's power supply may be required. To determine the resistor value for your installation, check the input requirements for your computer or RTU. The pull-up voltage, *(the power supply the resistor is connected to)*, must be less than the maximum allowed voltage for the computer or RTU input. Usually the pull-up resistor is connected to the same power source used for the MicroPulser.

Some devices may already be configured for an open collector device and will not require adding the pull-up resistor. Check the input specifications for the equipment that you are connecting to before attempting the MicroPulser installation.

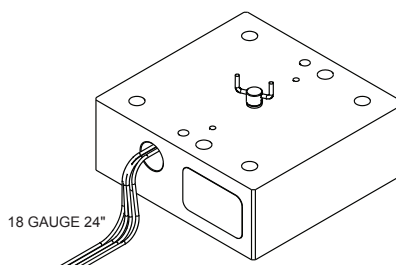
## Specifications

Resolution.....	1000 Pulses / Revolution
Operating Temperature Range.....	-40 to +65°C
Power Supply Voltage.....	+10 to +30Vdc
Power Supply Current.....	.20ma MAX
Outputs.....	Open Collector, +30V @ 50ma MAX
Maximum Shaft Speed.....	50 RPM
Humidity.....	100% relative humidity
Enclosure Rating.....	NEMA 3R

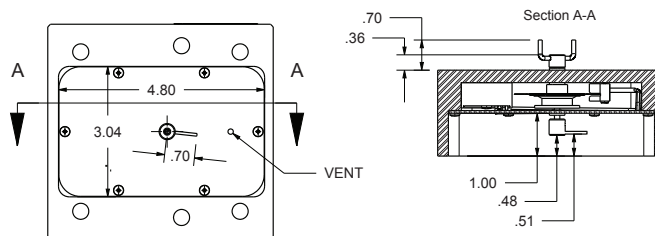
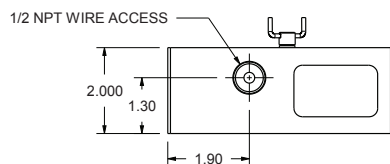


## Entity Parameters

$V_{oc}$  or  $V_t \leq 30V$   
 $I_{sc}$  or  $I_t \leq 100ma$   
 $C_a \leq C_{cable} + 0\mu F$   
 $L_a \geq L_{cable} + 0mH$



RED - 10 to 30Vdc  
 BLACK - GROUND  
 BLUE - CW PULES (OUTPUT A)  
 PURPLE - CCW PULSES (OUTPUT B)



## Warranty

Microflex, LLC warrants this unit against defects in materials and workmanship for a period of one year from the date of shipment. Microflex, LLC will, at its option, repair or replace equipment that proves to be defective during the warranty period. This warranty includes parts and labor.

A Return Authorization (RA) number must be obtained from the factory and clearly marked on the outside of the package before equipment will be accepted for warranty work.

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To obtain a Return Authorization (RA) number required for all returns, phone 281-855-9639, fax: 832-422-4391, or email [sales@microflx.com](mailto:sales@microflx.com)



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